ACCORDING to the Report of the Government Central Museum at Madras for the year 1881-82, by Surgeon-Major Bidie, the number of visitors was 211,246, and therefore 37,348 in excess of the attendance in the previous year, and 23,051 above the average of the preceding five years. Of the visitors, 40·17 per cent. were women and girls, and 59·82 men and boys; the corresponding rates in 1880-81 having been 39·36 and 60·63. There was thus a slight increase in the number of female visitors on the days on which the Museum was open to all classes. As in former years, the building was cleared of males, and reserved exclusively for native ladies on the afternoon of the first Saturday of each month, but on these occasions the average daily attendance was but 37 against 114 in the previous year. It is difficult to explain this decline, in the face of the anxiety expressed by native gentlemen for extended means of intellectual culture and amusement for the ladies of their families. In some cases it was evidently considered undignified to visit the Museum when other ladies were also allowed to attend, as I had various importunate requests to have the building specially opened for a single family on Sunday, which I was obliged to refuse. All visitors before leaving the lobby are required to write their names in the door-book, or if unable to sign, their numbers are counted During the year 26·45 per cent. of the total visitors, against 27·77 per cent. in 1880-81, entered their names in the book, and 73·54 per cent. professed their inability to write. In looking at these figures as a gauge of popular education, it has to be pointed out that in many cases one member of a family or party signs for the whole, and that a small proportion consists of children too young too be able to write. As stated last year, a large number of the more intelligent ordinary visitors pick up scraps of useful knowledge as they pass through the rooms, and may come for the express purpose of acquiring information. As a whole the Museum is perhaps the most popular public institution in Madras, and there can be no doubt that its popularity and utility will increase as the education of the lower classes advance. Tables B and C in appendix show the monthly attendance and other results as regards visitors. The report contains a list of the numerous additions in all departments, made to the Museum during the year.

THE mucous membrane of the larynx is known to be extremely sensitive, so that, when touched, violent reflex movements are produced, the glottis contracting spasmodically, and the whole larynx rising forcibly. M. Brown Séquard has lately made the interesting observation (*Comptes Rendus*) that complete local anæsthesia may be obtained in the larynx by directing on the upper part of that organ (through an incision at the back of the animal's mouth), a rapid current of carbonic acid, for fifteen seconds to two or three minutes. It becomes possible to introduce a tube and even a finger (in the case of a large dog) into the cavity of the larynx, and to turn it about without producing reaction. Chloroform vapour gives the same effect, but the other gas is preferred. There is some irritation at the outset. The local anæsthesia, which is accompanied by incomplete general anæsthesia, lasts several minutes (two to eight) after stopping the current. The experiment was repeated several times, at intervals, on the same animal, and no evil results were apparent. M. Brown Séquard proposes to experiment on the human subject by introducing carbonic acid into the larynx by the mouth or nostrils.

IT has been recently observed by Prof. Feichtinger of Munich (*Polyt. Jour.*) that of a number of different kinds of writing and printing paper examined, all those kinds that had been sized with resin had a more or less acid reaction, while this property was never met with in paper with animal sizing. (Paper can be easily tested in this respect by placing moistened blue litmus paper between folds of it.) The acid reaction was found to be due to free sulphuric acid, and it is thought probable that in the use of alum, in resin-sizing, free sulphuric acid is formed in the mass of paper, and remains there. The durability of a paper must undoubtedly be injured by presence of free sulphuric acid. Some of the papers with a strong acid reaction were kept fourteen days in a water bath, which was heated only by day, and they became quite brittle. The acid also acts prejudicially by gradually destroying the black colour of writing on the paper, especially in damp places.

M. GAUTHIER VILLARS has just published a translation of M. Cully's "Handbook of Practical Telegraphy," by Mr. Henry Berger and Paul Bardonnant, of the French Postal Telegraphic Service. This translation contains some useful supplements on the peculiarities of French telegraphy and the pneumatical service as established in Paris.

WE have received the *Proceedings* of the Norwich Geological Society for 1880-81, together with the anniversary address of the president, Mr. J. H. Blake. The former contains several good papers on local geology.

A USEFUL "Table Genérale et Systematique des Matières" contained in the first fifty-six volumes (1829-81) of the *Bulletin* of the Imperial Society of Naturalists of Moscow, has been prepared by M. E. Ballion, and published at Moscow by Archipoff and Co.

MR. R. ANDERSON is preparing for publication the papers read by him at the British Association, on Lightning Conductors.

THERE are now 375 naphtha wells on the Apsheron peninsula of the Caspian, their aggregate yield being 9,600,000 cwts. per year.

THE additions to the Zoological Society's Gardens during the past week include two Macaque Monkeys (*Macacus cynomolgus* ♂ ♀) from India, presented by Mr. A. Fitch; two Macaque Monkeys (*Macacus cynomolgus* ♂ ♀) from India, presented by Mr. L. Bennett; a Macaque Monkey (*Macacus cynomolgus* ♂) from India, presented by Mrs. Paris; a Nisnas Monkey (*Cercopithecus pyrrhonotus* ♂) from Nubia, presented by Mrs. F. Dixon; a Glutton (*Gulo luscus*) from Russia, presented by General Astashoff; a Hairy Armadillo (*Dasypus villosus*) from South America, presented by Mr. F. R. Warre; four Barbary Mice (*Mus barbarus*) from Barbary, presented by M. Pichot; a Blue and Yellow Macaw (*Ara ararauna*) from South America, presented by Mrs. Attenborough; two Common Waxbills (*Estrelda cinerea*) from West Africa, presented by Miss E. à Court; six Florida Tortoises (*Testudo polyphemus*) from Florida, presented by Mr. G. E. Manigault; eight —— Lemurs (sp. inc.) from Madagascar, deposited; two Malabar Squirrels (*Sciurus maximus*) from South India, a Violaceus Plantain Cutter (*Musophaga violacea*) from West Africa, a Greenland Falcon (*Falco candicans*) from Greenland, a Razor-billed Curassow (*Mitua tuberosa*), a Crested Curassow (*Crax alector*) from Guiana, three Elliot's Pheasants (*Phasianus ellioti* ♂ ♀ ♀) from Ningpo, purchased; a Black-faced Spider Monkey (*Ateles ater*) from East Peru, an Eland (*Oreas canna* ♀) from South Africa, received on approval.

BIOLOGICAL NOTES

ON A NEW GENUS OF CRYPTOPHYCEÆ.—A freshwater algæ recently discovered in Brazil, belonging to the group of the Stigonemeæ, has been described by Drs. E. Bornet and A. Grunow, under the name of *Mazæa rivularioides*. This algæ, remarkable in various ways, externally resembles *Rivularia plicata*, Harv., its fronds rounded, more or less irregularly knobby, attain to a diameter of about twenty-five millimetres, at first solid and somewhat firm; later they become hollow and

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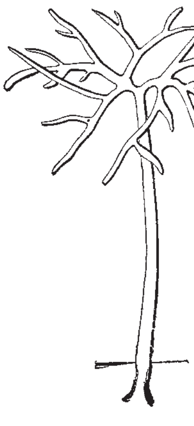
soft. The colour of moistened specimens is of a sombre green, inclining to olive. The trichomes, immersed in a homogenous colourless jelly, spread themselves around a central space; they increase towards the periphery, and become lost in the interior. These trichomes give origin to branches, either scattered or unilateral, which elevate themselves to the one height and to heterocysts either sessile on the side of the articulations, or borne on a pedicel of one to three cells; intercalary heterocysts were not observed. The heterocysts were oblong in form, easily to be distinguished from the ordinary articulations by their size, and above all, by the nature of their contents, which is more homogeneous; when old, they assume a yellowish tint; the chloroiodide of zinc solution colours them purple. When an articulation forms a heterocyst or a branch, it first forms a lateral enlargement, which is very early isolated. This new cell may at once change into a heterocyst, and then it will be directly applied to the side of the articulation, as are the heterocysts of Capsosira and those on the large branches of Stigonema, or it may be divided once or twice before the formation of the heterocyst, which will be then pedicellated, or it may even form the cell from which a branch may arise. The branches, like the heterocysts, are not uniformly arranged along the length of the filament. At certain intervals they become closer and they become level at the same height. Some remain simple, others ramify, none terminate in a hair. No distinct trace of a sheath was observed around any of the younger portions of the trichomes, but at the base the articulations are sometimes surrounded with a somewhat thick envelope. None of the specimens (not very numerous) examined showed the least trace of spores or homogones. Two characters of this genus are particularly interesting its Rivulariaceous appearance, and its pedicellated heterocysts. This latter peculiarity, which to this time was not yet met with among the Cryptophyceæ, indicates in Mazæa a degree of specialisation of the parts of the trichome more eminent than that in any other genus of Stigonemaceæ, in fact represents the highest development in the group. Now that in this form and in *Capscsira brebissonii = Stigonema zonotrichioides*, Nordst, Stigonemaceæ have Rivularioid representatives; it may be noted that Scytonemaceæ is the only tribe in which this type is wanting. The new species is beautifully figured after drawings by Bornet (*Bull. de la Soc. Bot. de France*, tome xxviii.).

Seed Leaves of Bursera.—The cotyledons of the natural family Burseraceæ are described by Bentham and Hooker ("Genera Plantarum," vol. i. p. 321) as often membranous contortuplicate, rarely solid and plano-convex, and in the genus Bursera itself they are diagnosed in addition as "interdum trifidæ, in una specie hippocrepiformes." Prof. Asa Gray, (*Proc. Amer. Acad. Arts and Sciences*, vol. xvii. p. 230) mentions that specimens of *Bursera microphylla* were collected at Cape San Lucas, Lower California, in fruit, and also in Sonora in flower. It appears to have all the characters of Bursera except that the ovules are solitary in the cells. Recently Messrs. Parish have collected it in Arizona, near Maricopa, in fruit, and from some of the seeds sent by them to the Botanic Gardens at Harvard University, young plants have been raised. The cotyledons are very peculiar, and are in the woodcut represented a little larger than life; they are biternately dissected into narrow linear lobes. The second pair are simpler, the secondary lobes being fewer and short, the next succeeding are pinnately parted into seven leaflets, passing toward the adult form of leaf, which is pinnate with numerous very small leaflets on an interruptedly margined rachis.



Affinities of the Bower Birds.—The very interesting group of birds known as the Bower Birds is regarded by Mr. Elliott as connected with the Birds of Paradise, and in this view Count Salvadori agrees. Mr. Sharpe in his "Catalogue of Birds" takes a different view, but in a paper on the Ornithology of New Guinea, just published (*Journal Linnean Society*, vol. xvi. p. 443, July 31, 1882), he acknowledges that he has now been convinced that the views of Elliot and Salvadori are right, and states that the following note, by Mr. Goldie, of the habits of *Diphyllodes chrysoptera*, Gould, which is a true Bird of Paradise, has in great measure been the cause of this change of view. Mr. Goldie writes: "The bird is found in very rough and thick scrubby country, at the head of gullies or on steep sidings, where he clears a space of ground, about seven feet by four, by stripping all the leaves and twigs off the bushes, leaving only the heavier branches. The ground is cleared of all leaves and is quite bare, and this seems to be his playground; in it he dances and flutters about as if at play. The natives know his call and attract him, but as soon as he perceives any one, away he flies, and can be tempted no more at that time. When not about the nest he is to be found in exceedingly high trees. His food consists of seeds." These habits are curiously like those of the Bower Birds, and show that Birds of Paradise can flirt on the earth as well as among the tree tops.

GEOGRAPHICAL NOTES

Dr. Miklucho-Maclay has arrived at St. Petersburg after a sojourn of twelve years on New Guinea and neighbouring islands. It is stated that the eminent naturalist and explorer intends to remain only six weeks in Russia, when he will return to Sydney, where, as we have already intimated, he has been the means of founding a zoological station.

Dr. Emil Holub is arranging to set out for his new expedition to South Africa in April 1883. He proposes to spend from six to eight months in Cape Colony and in the Bechuana country respectively; after which he intends to penetrate as far north of the Zambesi as possible. Dr. Holub will devote his attention to observations and collections in zoology, botany, geology, and ethnography.

Mr. H. K. Bancroft, author of the well-known work on the Native Races of the Pacific States, is about to begin the issue of a new work in 25 large vols., giving the History of the Pacific States of North America. It is an enormous undertaking. Trübner and Co. are the publishers.

An expedition under Lieut. Andreyew, sent out by the Russian Geographical Society, has safely reached Novaya Zemlya, where it will pass the winter. Besides Lieut. Andreyew there is a scientific staff and five sailors.

Mr. Stanford has issued the second instalment of Mr. Ravenstein's large map of Eastern Equatorial Africa. It contains sheets 12 to 18, with the exception of sheet 15. These sheets combine all the region around Lake Tanganyika, a large part of the course of the Lualuba, the Mwvtan Nzige, much of the Victoria Nyanza and the country around it, and the wide district lying between the north end of Nyassa, the south of Tanganyika, and the coast to Zanzibar. The routes of all travellers are given, the authorities for every leading feature stated, and the information laid down so detailed that the map serves all the purposes of a special treatise on African geography. The map is a credit to Mr. Ravenstein as well as to the enterprise of the Geographical Society, at whose expense it is being constructed.

The *Deutsche Rundschau für Geographie und Statistik* has entered upon its fifth year, and appears to be a good example of a popular journal of geography. In the first number of the new volume we find an article on the Ethnography of Central Asia, by Dr. Ujfalvy; an article on Egypt, by Herr Schweiger-Lerchenfeld; an illustrated paper on Land and People in Sikkim; papers on the Transit of Venus and the Sun's Parallax, by Dr. Haletchek; on the Hydrography of Central Africa and the interesting problem of the Welle, by Dr. Chavanne; on

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